

Contents

VOLUME 80 (1989)

(Abstracted/Indexed in: *Biol. Abstr.*, *Chem. Abstr.*, *Curr. Contents AB & ES*, *Environ. Period. Bibliogr.*, *Excerpta Med.*, *Geo Abstr.*, *Oceanogr. Lit. Rev.*, *PASCAL/CNRS*, *Selected Water Resour. Abstr.*)

Special Issue: Future Environments for Europe: An IIASA Study of Some Implications of Alternative Development Paths

| | |
|---|-----|
| <i>Foreword</i> | iii |
| <i>Major Findings</i> | v |
| <i>Acknowledgements</i> | vii |
| 1. Introduction | 1 |
| 2. Methods | 3 |
| 3. Socioeconomic futures for Europe. | 5 |
| 4. Environmental futures for Europe. | 16 |
| 5. Policy dilemmas and policy exercises | 50 |
| 6. Early warning monitoring systems | 61 |
| 7. Some plausible environmental consequences of four alternative development paths | 68 |
| 8. Major findings and general recommendations on policies appropriate for sustaining the European environment | 80 |
| 9. Recommendations for future research | 86 |
| References. | 94 |
| Appendix A: List of meetings held in support of study | 99 |
| Appendix B: List of IIASA working papers and related publications within the framework of the study | 99 |
| Appendix C: Some of the principal monitoring systems in Europe. | 100 |
| Appendix D: Acronyms | 102 |

Regular Papers

| | |
|--|-----|
| Variation in cadmium content of caribou tissues from northern Québec M. Crête, R. Nault (Saint-Cyrille, Qué., Canada), P. Walsh, J.-L. Benedetti, M.A.Lefebvre, J.-P. Weber and J. Gagnon (Sainte-Foy, Qué., Canada) | 103 |
| Effect of applications of sewage sludge on N, P, K, Ca, Mg and trace element contents of plant tissues D. Couillard and Y. Grenier (Sainte-Foy, Qué., Canada) | 113 |
| Composition of chlorinated dibenzodioxins and dibenzofurans in various samples V. Zitko (St. Andrews, N.B., Canada) | 127 |
| Macroalgae and phytoplankton standing crops in the central Venice Lagoon: Primary production and nutrient balance A. Sfriso, B. Pavoni and A. Marcomini (Venice, Italy). | 139 |
| Urinary nitrite in Japanese patients with urinary tract infections T. Mizutani, N. Akinaga (Kyoto, Japan) and H. Takatera (Osaka, Japan) | 161 |
| Trace element analysis in environmental and occupational health: Box plot representation of elemental composition results G. Nicolaou, R. Pietra, E. Sabbioni (Ispira, Italy) and R.M. Parr (Vienna, Austria) | 167 |

Types of contribution: Full papers reporting original work; Short Communications, 5 pages for continuing original work or the reporting of preliminary findings with a minimum of discussion data; Technical Notes, very brief statements of new or important findings, to be published in the journal as soon as possible and on a priority basis.

301

| | |
|--|-----|
| Cadmium and lead contents in rice available in various areas of Asia T. Watanabe, H. Nakatsuka and M. Ikeda (Sendai, Japan). | 175 |
| An ephemeral forest drainage ditch as a source of aluminium to surface waters B. Reynolds and S. Hughes (Bangor, Wales, U.K.) | 185 |
| Inorganic aluminium-hydrogen ion relationships for acidified streams; The role of water mixing processes C. Neal (Wallingford, U.K.) and N. Christophersen (Oslo, Norway). | 195 |
| Predicting the long-term variations in stream and lake inorganic aluminium concentrations for acidic and acid sensitive catchments C. Neal, T. Musgrove and P.G. Whitehead (Wallingford, U.K.). | 205 |
| Fluorine variations in Welsh streams and soil waters C. Neal (Wallingford, U.K.). | 213 |
| The radioactivity of coloured rain in Thessaloniki, Greece C. Papastefanou and M. Manolopoulou (Thessaloniki, Greece). | 225 |
| A longitudinal study of dentine lead levels and intelligence, school performance and behaviour: The measurement of dentine lead J.E. Fergusson, N.G. Kinzett, D.M. Fergusson and L.J. Horwood (Christchurch, New Zealand) | 229 |
| Assimilation of thorium isotopes into terrestrial vegetation D.R. Rayno (Raleigh, NC, U.S.A.) | 243 |
| Sources and storm loading variations of metal species in a gullypot catchment G.M. Morrison, D.M. Revitt and J.B. Ellis (Enfield, U.K.) | 267 |
| Assessment of air pollution sources in an industrial atmosphere using principal component and multilinear regression analysis C.A. Pio, T.V. Nunes, C.S. Borrego and J.G. Martins (Aveiro, Portugal) | 279 |

Short Communication

| | |
|---|-----|
| Nickel-induced histopathological alterations in the gill architecture of a tropical freshwater perch, <i>Colisa fasciatus</i> (Bloch & Schn.) K. Nath and N. Kumar (Gorakhpur, India). | 293 |
|---|-----|

| | |
|-------------------------|-----|
| Announcements | 297 |
| Author Index | 298 |
| Subject Index | 299 |

References

- As the scope of the journal has grown a wide range of journals, both methods of publication will be accepted. Manuscripts should be prepared and written in English. Method (a) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980. Method (b) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980. Method (c) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980. Method (d) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980. Method (e) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980. Method (f) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980. Method (g) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980. Method (h) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980. Method (i) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980. Method (j) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980. Method (k) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980. Method (l) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980. Method (m) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980. Method (n) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980. Method (o) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980. Method (p) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980. Method (q) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980. Method (r) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980. Method (s) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980. Method (t) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980. Method (u) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980. Method (v) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980. Method (w) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980. Method (x) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980. Method (y) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980. Method (z) References in the text should be given in the following form: (1) The author(s) of the work (2) The year of publication (3) The title of the work (4) The journal title (5) The volume number (6) The page number (7) The year of publication. Example: (1) Smith (2) 1980 (3) The effect of temperature on the growth of *Colisa fasciatus* (4) *Journal of Fish Biology* (5) 12 (6) 123 (7) 1980.